

SEQUENCE LISTING

<110> Turner, C. Alexander Jr.  
Nehls, Michael C.  
Friedrich, Glenn  
Zambrowicz, Brian  
Sands, Arthur T.

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tctaaaagcc	aaaaacaaaa	agaagaagcc	tacctacttt	ttgccaaagc	agctgacatg	420
ggaaacttga	aagctatgga	gaaaatggct	gacgcttgc	tatttgaaaa	tttggcggt	480
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tactttcatg	gaaaaggagt	tcccctgaat	tatgccraag	cacttaaata	ctttcagaaa	1200
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<213> Homo sapiens

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Arg Asn Val Thr Thr Gln Val Ser Val Asn Glu Ile Lys Gln Tyr Leu  
35 40 45  
Ser His Ile Leu Glu Gln Arg Thr Ser Ser Asn Val Ile Asn Lys Arg  
50 55 60  
Glu Asn Leu Leu Glu Lys Lys Asn Gln Arg Lys Ile Arg Ile Lys  
65 70 75 80  
Gly Ile Gln Asn Lys Asp Ile Leu Lys Arg Asn Lys Asn His Leu Gln  
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Lys Gln Ala Glu Lys Asn Phe Thr Asp Glu Gly Asp Gln Leu Phe Lys  
100 105 110  
Met Gly Ile Lys Val Leu Gln Gln Ser Lys Ser Gln Lys Gln Lys Glu  
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Glu Ala Tyr Leu Leu Phe Ala Lys Ala Ala Asp Met Gly Asn Leu Lys  
130 135 140  
Ala Met Glu Lys Met Ala Asp Ala Leu Leu Phe Gly Asn Phe Gly Val  
145 150 155 160  
Gln Asn Ile Thr Ala Ala Ile Gln Leu Tyr Glu Ser Leu Ala Lys Glu  
165 170 175  
Gly Ser Cys Lys Ala Gln Asn Ala Leu Gly Phe Leu Ser Ser Tyr Gly  
180 185 190  
Ile Gly Met Glu Tyr Asp Gln Ala Lys Ala Leu Ile Tyr Tyr Thr Phe  
195 200 205  
Gly Ser Ala Gly Gly Asn Met Met Ser Gln Met Ile Leu Gly Tyr Arg  
210 215 220  
Tyr Leu Ser Gly Ile Asn Val Leu Gln Asn Cys Glu Val Ala Leu Ser  
225 230 235 240  
Tyr Tyr Lys Lys Val Ala Asp Tyr Ile Ala Asp Thr Phe Glu Lys Ser  
245 250 255  
Glu Gly Val Pro Val Glu Lys Val Arg Leu Thr Glu Arg Pro Glu Asn  
260 265 270  
Leu Ser Ser Asn Ser Glu Ile Leu Asp Trp Asp Ile Tyr Gln Tyr Tyr  
275 280 285  
Lys Phe Leu Ala Glu Arg Gly Asp Val Gln Ile Gln Val Ser Leu Gly  
290 295 300  
Gln Leu His Leu Ile Gly Arg Lys Gly Leu Asp Gln Asp Tyr Tyr Lys  
305 310 315 320  
Ala Leu His Tyr Phe Leu Lys Ala Ala Lys Ala Gly Ser Ala Asn Ala  
325 330 335  
Met Ala Phe Ile Gly Lys Met Tyr Leu Glu Gly Asn Ala Ala Val Pro  
340 345 350  
Gln Asn Asn Ala Thr Ala Phe Lys Tyr Phe Ser Met Ala Ala Ser Lys  
355 360 365  
Gly Asn Ala Ile Gly Leu His Gly Leu Gly Leu Leu Tyr Phe His Gly  
370 375 380  
Lys Gly Val Pro Leu Asn Tyr Ala Glu Ala Leu Lys Tyr Phe Gln Lys  
385 390 395 400

Ala Ala Glu Lys Gly Trp Pro Asp Ala Gln Phe Gln Leu Gly Phe Met  
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 atcaataaaaa gagaAAATCT CCTGGAGAAA aagaagaatc aacgtaaaaat aagaataaaaa   240  
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 <212> PRT  
 <213> Homo sapiens

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 Arg Asn Val Thr Thr Gln Val Ser Val Asn Glu Ile Lys Gln Tyr Leu  
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 Ser His Ile Leu Glu Gln Arg Thr Ser Ser Asn Val Ile Asn Lys Arg  
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 Glu Asn Leu Leu Glu Lys Lys Asn Gln Arg Lys Ile Arg Ile Lys  
   65              70              75              80  
 Gly Ile Gln Asn Lys Asp Ile Leu Lys Arg Asn Lys Asn His Leu Gln  
   85              90              95

Lys Gln Ala Glu Lys Asn Phe Thr Asp Glu Gly Asp Gln Leu Phe Lys  
     100                     105                     110  
 Met Gly Ile Lys Val Leu Gln Gln Ser Lys Ser Gln Lys Gln Lys Glu  
     115                     120                     125  
 Glu Ala Tyr Leu Leu Phe Ala Lys Ala Ala Asp Met Gly Asn Leu Lys  
     130                     135                     140  
 Ala Met Glu Lys Met Ala Asp Ala Leu Leu Phe Gly Asn Phe Gly Val  
     145                     150                     155                     160  
 Gln Asn Ile Thr Ala Ala Ile Gln Leu Tyr Glu Ser Leu Ala Lys Glu  
     165                     170                     175  
 Gly Ser Cys Lys Ala Gln Asn Ala Leu Gly Phe Leu Ser Ser Tyr Gly  
     180                     185                     190  
 Ile Gly Met Glu Tyr Asp Gln Ala Lys Ala Leu Ile Tyr Tyr Thr Phe  
     195                     200                     205  
 Gly Ser Ala Gly Gly Asn Met Met Ser Gln Met Ile Leu Gly Tyr Arg  
     210                     215                     220  
 Tyr Leu Ser Gly Ile Asn Val Leu Gln Asn Cys Glu Val Ala Leu Ser  
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 Tyr Tyr Lys Lys Val Ala Asp Tyr Ile Ala Asp Thr Phe Glu Lys Ser  
     245                     250                     255  
 Glu Gly Val Pro Val Glu Lys Val Arg Leu Thr Glu Arg Pro Glu Asn  
     260                     265                     270  
 Leu Ser Ser Asn Ser Glu Ile Leu Asp Trp Asp Ile Tyr Gln Tyr Tyr  
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 Lys Phe Leu Ala Glu Arg Gly Asp Val Gln Ile Gln Val Ser Leu Gly  
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 Gln Leu His Leu Ile Gly Arg Lys Gly Leu Asp Gln Asp Tyr Tyr Lys  
     305                     310                     315                     320  
 Ala Leu His Tyr Phe Leu Lys Ala Ala Lys Ala Gly Ser Ala Asn Ala  
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 Met Ala Phe Ile Gly Lys Met Tyr Leu Glu Gly Asn Ala Ala Val Pro  
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 Gln Asn Asn Ala Thr Ala Phe Lys Tyr Phe Ser Met Ala Ala Ser Lys  
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 Gly Asn Ala Ile Gly Leu His Gly Leu Gly Leu Leu Tyr Phe His Gly  
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 Lys Gly Val Pro Leu Asn Tyr Ala Glu Ala Leu Lys Tyr Phe Gln Lys  
     385                     390                     395                     400  
 Ala Ala Glu Lys Gly Trp Pro Asp Ala Gln Phe Gln Leu Gly Phe Met  
     405                     410                     415  
 Tyr Tyr Ser Gly Ser Gly Ile Trp Lys Asp Tyr Lys Leu Ala Phe Lys  
     420                     425                     430  
 Tyr Phe Tyr Leu Ala Ser Gln Ser Gly Gln Pro Leu Ala Ile Tyr Tyr  
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 Leu Ala Lys Met Tyr Ala Thr Gly Thr Gly Val Val Arg Ser Cys Arg  
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 Thr Ala Val Glu Lys Arg Leu Thr Phe Leu Lys Lys Arg Arg Cys Ile  
     465                     470                     475                     480  
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<210> 11  
 <211> 1731

<212> DNA

<213> Homo sapiens

<400> 11

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<210> 12

<211> 576

<212> PRT

<213> Homo sapiens

<400> 12

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Arg Asn Val Thr Thr Gln Val Ser Val Asn Glu Ile Lys Gln Tyr Leu  
35 40 45  
Ser His Ile Leu Glu Gln Arg Thr Ser Ser Asn Val Ile Asn Lys Arg  
50 55 60  
Glu Asn Leu Leu Glu Lys Lys Asn Gln Arg Lys Ile Arg Ile Lys  
65 70 75 80  
Gly Ile Gln Asn Lys Asp Ile Leu Lys Arg Asn Lys Asn His Leu Gln  
85 90 95  
Lys Gln Ala Glu Lys Asn Phe Thr Asp Glu Gly Asp Gln Leu Phe Lys  
100 105 110  
Met Gly Ile Lys Val Leu Gln Gln Ser Lys Ser Gln Lys Gln Lys Glu

115	120	125
Glu Ala Tyr Leu Leu Phe	Ala Lys Ala Ala Asp Met	Gly Asn Leu Lys
130	135	140
Ala Met Glu Lys Met	Ala Asp Ala Leu Leu Phe	Gly Asn Phe Gly Val
145	150	155
Gln Asn Ile Thr Ala Ala	Ile Gln Leu Tyr Glu Ser	Leu Ala Lys Glu
165	170	175
Gly Ser Cys Lys Ala Gln Asn Ala	Leu Gly Phe Leu Ser	Ser Tyr Gly
180	185	190
Ile Gly Met Glu Tyr Asp Gln	Ala Lys Ala Leu Ile Tyr	Tyr Thr Phe
195	200	205
Gly Ser Ala Gly Gly Asn Met	Met Ser Gln Met	Ile Leu Gly Tyr Arg
210	215	220
Tyr Leu Ser Gly Ile Asn Val	Leu Gln Asn Cys	Glu Val Ala Leu Ser
225	230	235
Tyr Tyr Lys Lys Val Ala Asp Tyr	Ile Ala Asp Thr Phe	Glu Lys Ser
245	250	255
Glu Gly Val Pro Val Glu Lys Val	Arg Leu Thr Glu Arg	Pro Glu Asn
260	265	270
Leu Ser Ser Asn Ser Glu Ile	Leu Asp Trp Asp	Ile Tyr Gln Tyr Tyr
275	280	285
Lys Phe Leu Ala Glu Arg	Gly Asp Val Gln	Ile Gln Val Ser Leu Gly
290	295	300
Gln Leu His Leu Ile Gly Arg	Lys Gly Leu Asp	Gln Asp Tyr Tyr Lys
305	310	315
Ala Leu His Tyr Phe Leu Lys	Ala Ala Lys Ala	Gly Ser Ala Asn Ala
325	330	335
Met Ala Phe Ile Gly Lys Met	Tyr Leu Glu Gly Asn	Ala Ala Val Pro
340	345	350
Gln Asn Asn Ala Thr Ala Phe	Lys Tyr Phe Ser	Met Ala Ala Ser Lys
355	360	365
Gly Asn Ala Ile Gly Leu His	Gly Leu Gly Leu	Tyr Phe His Gly
370	375	380
Lys Gly Val Pro Leu Asn Tyr	Ala Glu Ala Leu Lys	Tyr Phe Gln Lys
385	390	395
Ala Ala Glu Lys Gly Trp	Pro Asp Ala Gln	Phe Gln Leu Gly Phe Met
405	410	415
Tyr Tyr Ser Gly Ser Gly Ile	Trp Lys Asp Tyr	Lys Leu Ala Phe Lys
420	425	430
Tyr Phe Tyr Leu Ala Ser Gln	Ser Gly Gln Pro	Leu Ala Ile Tyr Tyr
435	440	445
Leu Ala Lys Met Tyr Ala Thr	Gly Thr Gly Val	Val Arg Ser Cys Arg
450	455	460
Thr Ala Val Glu Lys Arg	Leu Thr Phe	Leu Lys Arg Arg Cys Ile
465	470	475
Gln Trp Arg Phe Ser Tyr	Gly Ile Glu Leu Pro	Phe Lys Asp Ile His
485	490	495
Leu Ala Arg Arg Leu Tyr Asp	Met Ala Ala Gln	Thr Ser Pro Asp Ala
500	505	510
His Ile Pro Val Leu Phe	Ala Val Met Lys	Leu Glu Thr Thr His Leu
515	520	525
Leu Arg Asp Ile Leu Phe	Phe Asn Gln Phe	Thr Thr Arg Trp Asn Trp
530	535	540
Leu Lys Leu Asp Asn Thr	Ile Gly Pro His	Trp Asp Leu Phe Val Ile
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Gly Leu Ile Val Pro Gly Leu Ile Leu Leu Leu Arg Asn His His Gly  
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<210> 13

<211> 1728

<212> DNA

<213> Homo sapiens

<400> 13

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<210> 14

<211> 575

<212> PRT

<213> Homo sapiens

<400> 14

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Arg Asn Val Thr Thr Gln Val Ser Val Asn Glu Ile Lys Gln Tyr Leu  
35 40 45  
Ser His Ile Leu Glu Gln Arg Thr Ser Ser Asn Val Ile Asn Lys Arg  
50 55 60  
Glu Asn Leu Leu Glu Lys Lys Asn Gln Arg Lys Ile Arg Ile Lys  
65 70 75 80

Gly Ile Gln Asn Lys Asp Ile Leu Lys Arg Asn Lys Asn His Leu Gln  
                   85                     90                     95  
 Lys Gln Ala Glu Lys Asn Phe Thr Asp Glu Gly Asp Gln Leu Phe Lys  
                   100                105                    110  
 Met Gly Ile Lys Val Leu Gln Gln Ser Lys Ser Gln Lys Gln Lys Glu  
                   115                120                    125  
 Glu Ala Tyr Leu Leu Phe Ala Lys Ala Asp Met Gly Asn Leu Lys  
                   130                135                    140  
 Ala Met Glu Lys Met Ala Asp Ala Leu Leu Phe Gly Asn Phe Gly Val  
                   145                150                    155                  160  
 Gln Asn Ile Thr Ala Ala Ile Gln Leu Tyr Glu Ser Leu Ala Lys Glu  
                   165                170                    175  
 Gly Ser Cys Lys Ala Gln Asn Ala Leu Gly Phe Leu Ser Ser Tyr Gly  
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 Ile Gly Met Glu Tyr Asp Gln Ala Lys Ala Leu Ile Tyr Tyr Thr Phe  
                   195                200                    205  
 Gly Ser Ala Gly Gly Asn Met Met Ser Gln Met Ile Leu Gly Tyr Arg  
                   210                215                    220  
 Tyr Leu Ser Gly Ile Asn Val Leu Gln Asn Cys Glu Val Ala Leu Ser  
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 Tyr Tyr Lys Lys Val Ala Asp Tyr Ile Ala Asp Thr Phe Glu Lys Ser  
                   245                250                    255  
 Glu Gly Val Pro Val Glu Lys Val Arg Leu Thr Glu Arg Pro Glu Asn  
                   260                265                    270  
 Leu Ser Ser Asn Ser Glu Ile Leu Asp Trp Asp Ile Tyr Gln Tyr Tyr  
                   275                280                    285  
 Lys Phe Leu Ala Glu Arg Gly Asp Val Gln Ile Gln Val Ser Leu Gly  
                   290                295                    300  
 Gln Leu His Leu Ile Gly Arg Lys Gly Leu Asp Gln Asp Tyr Tyr Lys  
                   305                310                    315                  320  
 Ala Leu His Tyr Phe Leu Lys Ala Ala Lys Ala Gly Ser Ala Asn Ala  
                   325                330                    335  
 Met Ala Phe Ile Gly Lys Met Tyr Leu Glu Gly Asn Ala Ala Val Pro  
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 Gln Asn Asn Ala Thr Ala Phe Lys Tyr Phe Ser Met Ala Ala Ser Lys  
                   355                360                    365  
 Gly Asn Ala Ile Gly Leu His Gly Leu Gly Leu Leu Tyr Phe His Gly  
                   370                375                    380  
 Lys Gly Val Pro Leu Asn Tyr Ala Glu Ala Leu Lys Tyr Phe Gln Lys  
                   385                390                    395                  400  
 Ala Ala Glu Lys Gly Trp Pro Asp Ala Gln Phe Gln Leu Gly Phe Met  
                   405                410                    415  
 Tyr Tyr Ser Gly Ser Gly Ile Trp Lys Asp Tyr Lys Leu Ala Phe Lys  
                   420                425                    430  
 Tyr Phe Tyr Leu Ala Ser Gln Ser Gly Gln Pro Leu Ala Ile Tyr Tyr  
                   435                440                    445  
 Leu Ala Lys Met Tyr Ala Thr Gly Thr Gly Val Val Arg Ser Cys Arg  
                   450                455                    460  
 Thr Ala Val Glu Lys Arg Leu Thr Phe Leu Lys Lys Arg Arg Cys Ile  
                   465                470                    475                  480  
 Gln Trp Arg Phe Ser Tyr Gly Ile Glu Leu Pro Phe Lys Asp Ile His  
                   485                490                    495  
 Leu Ala Arg Arg Leu Tyr Asp Met Ala Ala Gln Thr Ser Pro Asp Ala  
                   500                505                    510  
 His Ile Pro Val Leu Phe Ala Val Met Lys Leu Glu Thr Thr His Leu

515                    520                    525  
Leu Arg Asp Ile Leu Phe Phe Asn Phe Thr Thr Arg Trp Asn Trp Leu  
530                    535                    540  
Lys Leu Asp Asn Thr Ile Gly Pro His Trp Asp Leu Phe Val Ile Gly  
545                    550                    555                    560  
Leu Ile Val Pro Gly Leu Ile Leu Leu Arg Asn His His Gly  
565                    570                    575